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| 10/008,410      | 11/13/2001  | Richard Nicholas Whyne | 21334-1033          | 2971             |

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EXAMINER

NGUYEN, PHUONGCHI T

ART UNIT PAPER NUMBER

2833

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/008,410

Applicant(s)

WHYNE ET AL.

Examiner

Phuongchi T Nguyen

Art Unit

2833

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-14, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 7 and 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Claim Objections*

1. Claims 16 and 17 are objected to because of the following informalities:

Claim 16, line 3, "a recesses" should be changed to – recesses --.

Claims 3 and 5, line 2, "the bight" should be changed into – a bight --.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hsiao et al (US 6142810).

In regard to claim 1, Hsiao et al discloses a terminal for use with a socket, the terminal (3) comprising a pin engaging portion (311, 313) having a pair of contact arms (312) which are positioned to make electrical engagement with a mating pin (5); a retention portion (32) extending from the pin engaging portion (311, 313), side edges (321) of the retention portion (32) are dimensioned to create a frictional interference with side wall of a cavity of the socket; a mounting portion (area defined by the lower surface of 32 and 34) and extending from the retention portion (32) in an opposite direction from the pin engaging portion (311, 313), the mounting portion (area defined by the lower surface of 32 and 34) having at least one resilient leg (between 32 and 34) which extends from the retention portion (32) to a solder pad (34) which is soldered to a substrate; whereby the solder pad (34) is spaced from the retention portion (32) a sufficient distance to allow the at least one resilient leg (between 32 and 34) to provide the resilient characteristics required to

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allow the at least one resilient leg (between 32 and 34) to resiliently compensate for misalignment or movement of the solder relative to the solder pad (figure 6).

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 6, 8-12, 14 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemke et al (US6443750B1-herein after referred to as Lemke) in view of Hsiao et al (US 6142810-herein after referred to as Hsiao).

In regard to claims 1 and 18, Lemke discloses a terminal (attachment 1) for use with a socket, the terminal comprising a pin engaging portion (345, 343) having a pair of contact arms (A1, A2) which are positioned to make electrical engagement with a mating pin (P); a retention portion (347) extending from the pin engaging portion (345, 343), side edges (B) of the retention portion (347) are dimensioned to create a frictional interference with side wall of a cavity of the socket (figure 7c); a mounting portion (357) extending from the retention portion (347) in an opposite direction from the pin engaging portion (345, 343). Lemke lacks an extension, which extends from the retention portion to a solder pad. However, Hsiao teaches the mounting portion (area defined by the lower surface of 32 and 34) having at least one resilient leg (between 32 and 34) which extends from the retention portion (32) to a solder pad (34) which is soldered to a substrate; whereby the solder pad (34) is spaced from the retention portion (32) a sufficient distance to allow the at least one resilient leg (between 32 and 34) to provide the resilient characteristics required to allow the at least one resilient leg (between 32 and 34) to resiliently compensate for

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misalignment or movement of the solder relative to the solder pad (figure 6). It would have been obvious to one having ordinary skill at the time the invention was made to modify the resilient leg of Lemke by providing the at least one resilient leg of mounting portion which extends from the retention portion to a solder pad as taught by Hsiao for adjusting the misalignment/movement of the terminal having a solder relative to the solder pad.

In regard to claim 2, Lemke discloses the terminal wherein the pair of contact arms (A1, A2) are nonsymmetrical, a first contact arm (A1) of the pair of contact arms is configured to have a longer electrical path across which signals are transmitted than a second contact arm (A2) (attachment 1).

In regard to claims 3 and 12, Lemke discloses (attachment 1) the terminal wherein a bight (D) integrally connects the first and second arms (A1, A2) together; a centerline of the bight portion (E1) is offset from a centerline of the terminal (E2).

In regard to claims 4 and 11, Lemke discloses (attachment 1) the terminal wherein the first contact arm (A1) has a reduced thickness (of T1) compared to (T2 of) the second contact arm (A2), whereby the first contact arm (A1) is configured to have a matched inductance to the second contact arm (A2) (a matched inductance is from a balance of the thickness and the different path of the two arms).

In regard to claims 6 and 14, Lemke lacks two legs of the mounting portion, which extend from the retention portion. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the legs of Lemke by duplicating two legs for balance the contact terminal; since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

In regard to claim 8, Lemke discloses the terminal having a positioning member (G) extending therefrom at a distance spaced from the retention portion (347), the positioning member

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(G) cooperates with a recess (receiving hole in the socket) (figure 7c and 5a) provided in the socket and is loosely retained therein to allow for movement of the at least one leg relative to the retention portion (347). Lemke lacks at least one leg. However, Hsiao teaches the terminal having the at least one leg (between 32 and 34) (figure 6). It would have been obvious to one having ordinary skill at the time the invention was made to modify the terminal of Lemke by providing the at least one leg as taught by Hsiao for increasing a flexibility of the mounting portion of the terminal.

In regard to claim 9, Lemke discloses the terminal wherein the positioning member (G) is positioned proximate the solder pad (adjacent 309) such that the movement of the solder pad will be controlled within the solder ball 309. (a term "lateral" is so broadly recited).

In regard to claims 10 and 19, Lemke discloses the terminal wherein the contact arms (A1) have a reduced material thickness (T1) (attachment 1).

***Allowable Subject Matter***

6. Claims 7, 13 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

In regard to claims 7 and 15, none of prior art teaches or suggest the terminal of use in the IC socket having the two resilient legs are separated by an opening, the opening extending from proximate the retention portion to a bridge which extends between the two resilient legs.

In regard to claim 13, none of prior art teaches or suggest the terminal wherein a neck member integrally attaches the pin engaging portion to the retention portion to provide flexibility.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Scholz et al (US6371784B1) (figure 4), Lee US(US6471534B1), Szu (US6478598B1) (figure 6) Pickles et al (US6454588B1) (figure 2), Ohkita et al (US6461183B1), Ohkita et al

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(US6478637B1) Hsu (US5454727) (figure 4) Szu (US6152757) (figure 4), Hsiao et al (US6142810), Howell et al (6319038B1) and Lin (US6267615B1) are cited to show in the contact terminal for use in the IC socket having two arm and the solder pad.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchi T Nguyen whose telephone number is (703)305-0729. The examiner can normally be reached on Monday through Thursday from 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Bradley can be reached on (703) 308 - 2319. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7723 for regular communications and (703) 305-7723 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

March 10, 2003

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